

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

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(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H 10012 PCT	FOR FURTHER ACTION	See Form PCT/PEA/416
International application No. PCT/EP2004/000049	International filing date (day/month/year) 07.01.2004	Priority date (day/month/year) 07.01.2003
International Patent Classification (IPC) or national classification and IPC C01F7/50	CORRECTED VERSION	
Applicant HUMBOLDT-UNIVERSITÄT ZU BERLIN et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
- a. ☐ sent to the applicant and to the International Bureau) a total of sheets, as follows:
- ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
- ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
- b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

Date of submission of the demand 30.07.2004	Date of completion of this report 19.01.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Besana, S Telephone No. +49 89 2399-8002



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/000049

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-24 as originally filed

Claims, Numbers

1-18 as originally filed

Drawings, Sheets

1/2-2/2 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	11-18
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	11-18
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
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Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

- D1: DELATTRE J.L. ET AL.: 'Plasma-Fluorination Synthesis of High Surface Area Aluminum Trifluoride from a Zeolite Precursor' JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 123, 2001, pages 5364-5365, XP002254993
- D2: FR-A-1 383 927 (DU PONT) 4 January 1965 (1965-01-04)
- D3: GB 995 186 A (MONTECANTI SOCIETA GENERALE PE) 16 June 1965 (1965-06-16)
- D4: US-A-2 959 557 (HANSFORD ROWLAND C) 8 November 1960 (1960-11-08)

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 11-18 is not new in the sense of Article 33(2) PCT.

Claims 11 and 12 are drafted in terms of a "product-by-process" claim. In view of the provisions of Article 64(2) EPC the EPO considers "product-by-process" claims to extend to the product per se. The product thus falls within the general definition of an amorphous metal fluoride. Taking into account the fact that a product is not necessarily new if it is made by a novel process and the interpretation of "product-by-process" claims used by the EPO, the subject-matter of claims 11 and 12 is considered to lack novelty in respect to documents D1-D3, when considered separately.

Document D1 (cf. p.5365 col.1 second paragraph) disclose amorphous AlF_3 catalysts having high surface area ($190 \text{ m}^2/\text{g}$).

Document D2 (cf. p.9 example 6) describes amorphous aluminum fluoride catalyst for fluorination reactions.

Document D3 (see the examples) describes the preparation of amorphous transition metal fluorides showing catalytic activity and having higher air and moisture stability than the respective starting halides (cf. p.2 l.46-59).

Hence, the subject-matter of claims 13-18 is not novel over the teaching of documents D1 to D3, when considered separately.

Re Item VII

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

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Certain defects in the international application

1. The term "acidic acid" used in claim 3 and in the description on pages 3 and 13 is unclear.
2. The formula for β -aluminum fluoride in Table 1 should be corrected to AlF_3 .

Re Item VIII

Certain observations on the international application

1. Although method claims 1 and 10 and product claims 11-13 and 18 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness. Moreover, lack of clarity of the claims as a whole arises, since the plurality of independent claims makes it difficult, if not impossible, to determine the matter for which protection is sought, and places an undue burden on others seeking to establish the extent of the protection.

Hence, claims 1, 10-13 and 18 do not meet the requirements of Article 6 PCT.